

### REMARKS

This application has been carefully reviewed in light of the Office Action dated February 10, 2009. Claims 1, 3 to 7 and 9 are in the application, with Claims 1, 4 and 7 being independent. Claims 2 and 8 have been cancelled, and Claims 1, 4, 7 and 9 have been amended. Reconsideration and further examination are respectfully requested.

In the Office Action, Claim 4 was rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,517,335 (Shu); Claims 1, 2, 5, 7 and 8 were rejected under 35 U.S.C. § 103(a) over Shu in view of U.S. Patent No. 5,867,286 (Lee); Claims 3 and 9 were rejected under 35 U.S.C. § 103(a) over Shu and Lee, and further in view of U.S. Patent No. 5,089,882 (Kaye); and Claim 6 was rejected under 35 U.S.C. § 103(a) over Shu in view of U.S. Patent No. 6,650,336 (Suzuki). Reconsideration and withdrawal are respectfully requested.

#### Independent Claim 4

Independent Claim 4 as amended generally concerns a lookup table for obtaining an output value defined for an input value. The lookup table includes a main lookup table adapted to, when a definition of an output value has or is regarded to have symmetry for a plurality of input values, or when a combination of the plurality of input values is limited by a specific existence condition, store the output values for the plurality of input values in consideration of at least one of the symmetry and the specific existence condition. The lookup table further includes a sub-lookup table adapted to store an address of an entry in which a first input value and a second input value of the plurality of input values are the same. The address of the main lookup table is determined on the basis of an address obtained by accessing the sub-lookup table with the first input value being equal or

less than the second input value of two arbitrary input values and a difference between the first and second input values, in correspondence with the two arbitrary input values. The main lookup table has a smaller number of entries than the number of all possible combinations of the first and second input values by utilizing symmetry of the output value for the first and second input values.

Thus, among its many features, Claim 4 provides that (i) the address of the main lookup table is determined on the basis of an address obtained by accessing the sub-lookup table with the first input value being equal or less than the second input value of two arbitrary input values and a difference between the first and second input values, in correspondence with the two arbitrary input values, and (ii) the main lookup table has a smaller number of entries than the number of all possible combinations of the first and second input values by utilizing symmetry of the output value for the first and second input values. The applied references of Shu, Lee, Kaye and Suzuki are not seen to disclose or suggest at least these features.

As understood by Applicant, Shu discloses computing an average value of RGB, and selecting a minimum value and a maximum value of three primary colors of RGB. Shu is seen to use a first lookup table (LUT1) and a second lookup table (LUT2), and to calculate a variable delta by using a value retrieved from LUT1 by using the average value. Further, Shu is seen to multiply the retrieved value by a second value retrieved from LUT2 by using the difference between the maximum and minimum values. Moreover, Shu is seen to multiply the two values obtained from the LUT1 and LUT2 to determine the delta value.

However, Shu is not seen to disclose or suggest that (i) an address of a main lookup table is determined on the basis of an address obtained by accessing a sub-lookup table with a first input value being equal or less than a second input value of two arbitrary input values and a difference between the first and second input values, in correspondence with two arbitrary input values. Further, Shu is not seen to disclose or suggest that (ii) the main lookup table has a smaller number of entries than the number of all possible combinations of the first and second input values by utilizing symmetry of the output value for the first and second input values.

In addition, Lee, Kaye and Suzuki have been reviewed and are not seen to compensate for the deficiencies of Shu. In particular, Lee, Kaye and Suzuki are not seen to disclose or suggest foregoing features (i) and (ii).

Claim 4 is therefore believed to be allowable over the applied references.

#### Independent Claims 1 and 7

Independent Claim 1 as amended generally concerns a color conversion method of inputting first and second color difference values and obtaining a corresponding saturation value. The method includes the step of creating a main lookup table which stores saturation values for color difference values, and a sub-lookup table for obtaining a value corresponding to the first color difference value for accessing the main lookup table, wherein the first color difference value is equal to or less than the second color difference value. The method further includes the steps of accessing the sub-lookup table with the first color difference value to obtain the value corresponding to the first color difference value, and determining an address of the main lookup table in correspondence with the first and second color difference values on the basis of the value obtained in the accessing

step and a difference between the first and second color difference values. In addition, the method includes the step of obtaining a saturation value corresponding to the first and second color difference values by accessing the main lookup table with the address determined in the determining step. The main lookup table has a smaller number of entries than the number of all possible combinations of the first and second color difference values by utilizing symmetry of the saturation value for the first and second color difference values.

Thus, among its many features, Claim 1 provides for (i) accessing the sub-lookup table with the first color difference value to obtain the value corresponding to the first color difference value, (ii) determining an address of the main lookup table in correspondence with the first and second color difference values on the basis of the obtained value and a difference between the first and second color difference values, and (iii) the main lookup table having a smaller number of entries than the number of all possible combinations of the first and second color difference values by utilizing symmetry of the saturation value for the first and second color difference values. The applied references of Shu, Lee, Kaye and Suzuki are not seen to disclose or suggest at least these features.

As noted above, Shu is seen to disclose a method which obtains two values from two lookup tables and multiplies those values to determine a delta value. However, Shu is not seen to disclose or suggest (i) accessing a sub-lookup table with a first color difference value to obtain a value corresponding to the first color difference value, and (ii) determining an address of a main lookup table in correspondence with the first and second

color difference values on the basis of the obtained value and a difference between the first and second color difference values.

With reference to foregoing feature (iii), the Office Action in its rejection of now cancelled Claims 2 and 8 directed attention to column 7, lines 45 to 51 of Shu. In this regard, the cited portion of Shu is merely seen to disclose that a lookup table (LUT1) stores values depicted as a curve which is symmetric about a midpoint (128). See Shu, Figure 5. However, the cited portion of Shu is not seen to disclose or suggest that the main lookup table has a smaller number of entries than the number of all possible combinations of the first and second color difference values by utilizing symmetry of the saturation value for the first and second color difference values.

Lee is not seen to compensate for the deficiencies of Shu. In this regard, Lee is seen to disclose a color processing apparatus having two look-up tables (e.g., LUT-1, LUT-2). Lee is further seen to disclose that LUT-1 stores index values and that LUT-2 stores transformation coefficients of matrices. Further, LUT-2 is seen to output a predetermined number of transformation coefficients corresponding to addresses specified by an output signal of LUT-1.

However, Lee is not seen to disclose or suggest (i) accessing the sub-lookup table with the first color difference value to obtain the value corresponding to the first color difference value, (ii) determining an address of the main lookup table in correspondence with the first and second color difference values on the basis of the obtained value and a difference between the first and second color difference values, and (iii) the main lookup table having a smaller number of entries than the number of all possible combinations of

the first and second color difference values by utilizing symmetry of the saturation value for the first and second color difference values.

In addition, Kaye and Suzuki have been reviewed and are not seen to compensate for the deficiencies of Shu and Lee. In particular, Kaye and Suzuki are not seen to disclose or suggest foregoing features (i) to (iii).

Claim 1 is therefore believed to be allowable over the applied references.

In addition, independent Claim 7 is an apparatus claim which generally corresponds to method Claim 1. Accordingly, Claim 7 is believed to be allowable for the same reasons.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied reference for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

No fees are believed due; however, should it be determined that additional fees are required, the Director is hereby authorized to charge such fees to Deposit Account 06-1205.

Finally, Applicant respectfully requests that the Examiner conduct a personal or telephonic interview with Applicant's representative regarding this case, before the Examiner takes this filing into consideration. Applicant respectfully requests that the Examiner contact Applicant's representative as indicated below.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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